C O R O N A D O H A L F M A R A T H O N

C E R T I F I C A T I O N R E P O R T

Submitted to

Ted Corbitt
Chairman, AAU Standards Committee

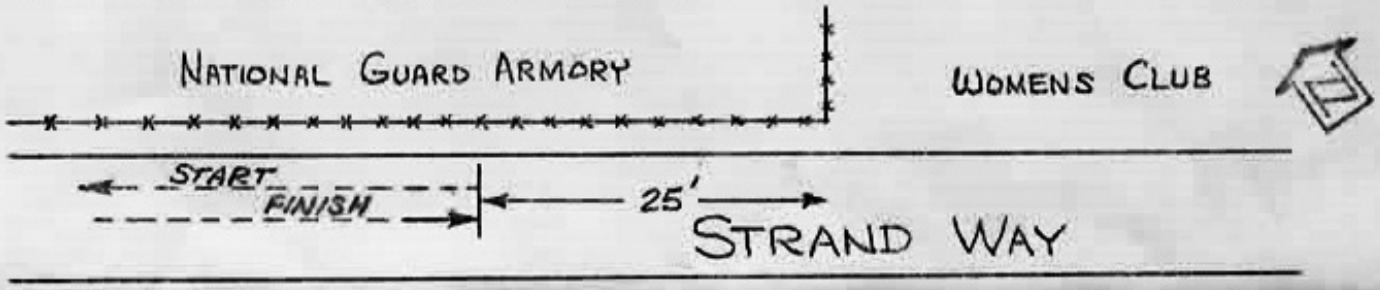
Description and measurements for a 13 mile 192.5 yard road race course around the city of Coronado, California.

Robert A. Letson

Robert A. Letson
July 1, 1974

DESCRIPTION

The first Coronado Half Marathon will be run at 7 AM on July 4, 1974, on an out-and-back road race course that encompases the city of Coronado, California (see attached map). The entire course is paved and is very flat. The only noticeable hill is a rise of 20 feet at three miles. The running route is generally on the right side of all streets, moving with traffic to avoid disturbing the normal habit patterns of the residents and visitors of Coronado. The start/finish line is on Strand Way 25 feet West of the east end of the chain link fence that surrounds the National Guard Armory:



Specifically, the Coronado Half Marathon course proceeds as follows:

From the start/finish line, proceed West and North on Strand Way .4 miles to Pomona Avenue; then North on Pomona Avenue one block to Glorietta Blvd.; then North on Glorietta Blvd. 1.2 miles to the end of the golf course; then around the traffic island and South on Glorietta Blvd. 1.3 miles to Ynez Place; then West on Ynez Place one block to Adella Avenue; then South on Adella Avenue one block, crossing Orange Avenue, to R. H. Dana Place; then Southwest on R. H. Dana Place one block to Ocean Blvd.; then West on Ocean Blvd. .7 miles to Ocean Lane; then North one block and West one block on Ocean Lane to Alder Street; then North on Alder Street one block to Coronado Avenue; then West one block and North .6 miles on Coronado Avenue to Sixth Street; then East on Sixth Street 4 blocks to Alameda Blvd.; then North on Alameda Blvd. .55 miles to First Street; then East on First Street .8 miles to A Avenue; then South on A Avenue two blocks to Third Street; then East on Third Street two blocks to Prospect (half-way point);

then North on Prospect one block to Second Street; then West on Second Street two blocks to A Avenue; then North on A Avenue one block to First Street; then West on First Street .8 mile to Alameda Blvd.; then South on Alameda Blvd. .55 mile to Sixth Street; then West on Sixth Street four blocks to Coronado Avenue; then South .6 mile and East one block on Coronado Avenue to Alder Street; then South on Alder Street one block to Ocean Lane; then East one block and South one block on Ocean Lane to Ocean Blvd.; then East on Ocean Blvd. .7 mile to R. H. Dana Place; then Northeast on R. H. Dana Place one block, crossing Orange Avenue, to Adella Avenue; then North on Adella Avenue one block to Ynez Place; then East on Ynez Place one block to Glorietta Blvd.; then North on Glorietta Blvd. 1.3 miles to the end of the golf course; then around the traffic island and South on Glorietta Blvd. 1.2 miles to Pomona Avenue; then South on Pomona Avenue one block to Strand Way; then South and East on Strand Way to the start/finish line.

In addition to the start/finish line, the following interval distances have been marked and can be used to provide split times:

1 mile: on Glorietta Blvd. near Margarita Avenue

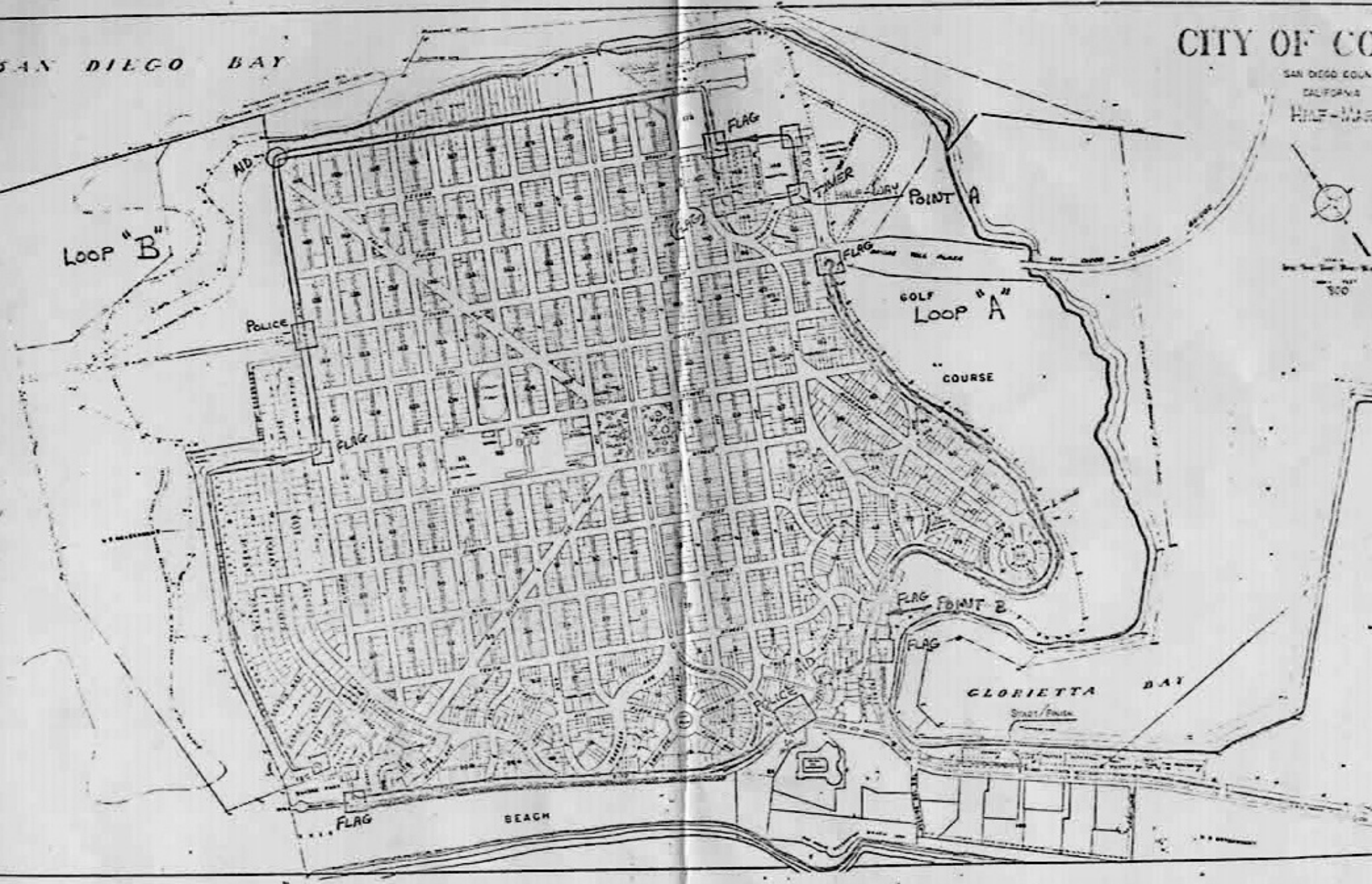
2 mile: on Glorietta Blvd. between Miguel Ave. and San Luis Rey Ave.

3 mile: on Adella Avenue 100 feet South of Ynez Place

5 mile: on Alameda Blvd. just North of Fifth Street

half-way point: on Prospect 8 yards North of Third Street

10 mile: on R. H. Dana Place just South of Orange Avenue


SAN DIEGO BAY
CITY OF CO
SAN DIEGO COUN
CALIFORNIA
HALF-MA
500
FLAG
AID
TIMER
HALF-WAY
POINT A
LOOP "B"
FLAG
GOLF
LOOP "A"
POLICE
COURSE
FLAG
FLAG
POINT B
FLAG
GLORIETTA
BAY
STAGE / PAVIL
POLICE
AID
FLAG
BEACH

MEASUREMENTS

MEASURING ROUTE

The measuring route for the Coronado Half Marathon is the shortest running route on the right side of the street not closer than one meter from the right curb and not closer than one meter from the center of the street on the left. Exceptions to this right-side-of-street rule are at the following intersections where runners will most likely cut across the street to negotiate a turn:

Ynez Place and Adella Avenue
Coronado Avenue and Sixth Street
A Avenue and Third Street
Third Street and Prospect
Prospect and Second Street
A Avenue and First Street

The measuring route for these exceptions is the most probable running route not closer than one meter from either curb.

CALIBRATIONS

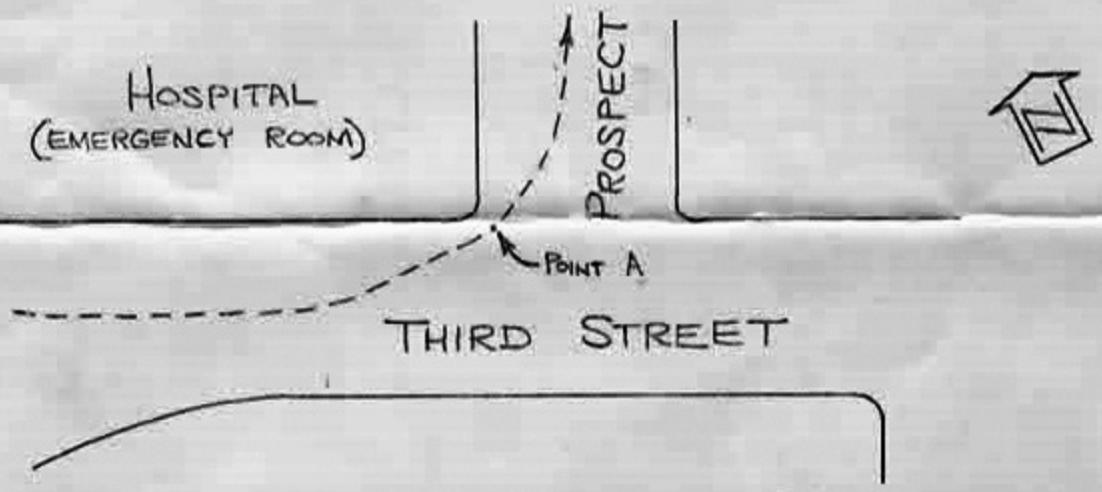
On June 16, 1974, the Mission Bay Road Calibration Course (1 mile accurate to ±.06 foot), which has been approved by the AAU Standards Committee, was used to calibrate a bicycle that measured a half-mile interval on First Street in Coronado, California. This half-mile interval was then used as an intermediate road calibration course for performing initial measurements of the Coronado Half Marathon.

On June 16, 1974, an HP3800A electronic distance meter was used to measure the intermediate half-mile course to an accuracy of ±.06 foot. This HP3800A measurement determined that the intermediate course was 2641.21 feet long, or 1.21 feet longer than a half-mile. The initial measurements for the Coronado Half Marathon were then adjusted to compensate for this error. The half-mile interval on First Street has now been shortened to 2640 feet ±.06 foot and a report has been written establishing it as a road calibration course for the city of Coronado, California (see attached report).

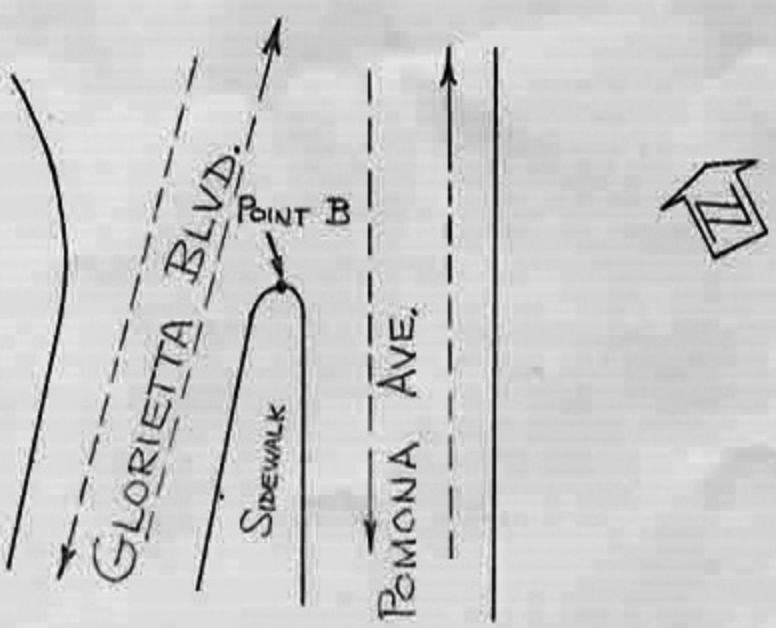
INITIAL MEASUREMENTS

On June 16, 1974, George Green and Bob Letson performed course measurements for the Coronado Half Marathon using the calibrated bicycle method. Bob Letson's bicycle had an Alan Jones 20Xrev counter on the front wheel and a Durant 1Xrev counter on the rear wheel. George Green's bicycle had an Alan Jones 20Xrev counter on the front wheel. The intermediate road calibration course on First Street was used as the calibration standard. The measuring points that were used to obtain counter readings are defined as follows:

Point A: This point is one meter from the Northwest curb of Prospect and Third Street, and is essentially the "half-way" point for the Coronado Half Marathon:



Point B: This point is at the North edge of the end of the sidewalk between Glorietta Blvd. and Pomona Avenue:



The counter readings for the initial course measurements are as follows:

	Bob Letson		George Green
	FRONT	REAR	
Point A	11300	0	74520
East end of ½ mile	20576.1	466 23/36	84283.5
West end of ½ mile	28085	844 22/36	92190.2
Point B (Glorietta Blvd.)	67394	2822 0/36	133693
Point B	102851	4607 0/36	171048
West end of ½ mile	142041	6580 0/36	212292
East end of ½ mile	149550	6957 23.5/36	220193.5
Point A	158837	7424 25/36	229990

The calibration constants obtained from the intermediate ½ mile interval on First Street are therefore:

15017.9/mile	755.625/mile	15808.2/mile

The total number of counts required to travel 13 miles 192.5 yards for each measuring wheel are therefore:

196875.3	9905.77	207235.6

The Coronado Half Marathon runs loop A twice and loop B once. The total number of counts for loops A+B+A are therefore:

182994	9209.69	192825

The number of counts needed to add to A+B+A to make 13 miles 192.5 yards are therefore:

13881.3	696.08	14410.6

The start/finish line is located on Strand Way to compensate for the extra distance. Because this start/finish route is run twice, the length of road needed should therefore be (in counts):

6940.7	348.04	7205.3

These number of counts were measured from point B along Strand Way by each measuring wheel and a tentative mark made. The three marks for the tentative start/finish line differed by 6 yards, ~~which implies that the measurement accuracy is approximately ±6 yards for the 13.11 mile course.~~ see attached letter. The average of these marks was located 10 feet West of the east end of the chain link fence that surrounds the National Guard Armory. TOTAL MEASUREMENT TIME: 9:30AM - 1PM (3½ HRS).

INTERVAL MARKS

The data from the initial course measurement implied that interval marks could be located as follows:

1 mile: point B + .5412 mile
2 mile: 1 mile + 1 mile
3 mile: point B + .1768 mile
5 mile: West end of ½ mile - .43078 mile
10 mile: point B - .2869 mile
half-way: point A + 8 yards

On June 22, 1974, Bob Letson calibrated the front wheel of his bicycle on the intermediate road calibration course on First Street, then computed the counts required to locate the various interval marks:

Calibrations: 79890 → 87405.5 → 7515.5
87520 → 95036 → 7516
7515.5, 7516 → 15031.5/mile

Locations: 1 mile: point B + 8135
2 mile: 1 mile + 15031.5
3 mile: point B + 2692
5 mile: West end of ½ mile - 6475
10 mile: point B - 4313

These interval points were then located and temporarily marked with masking tape.

HP3800A ADJUSTMENTS

The HP3800A measurement of the intermediate half-mile calibration course on First Street indicated that it was 1.21 feet too long.

This meant that all of the marks located by the initial measurement were in error and should be relocated by the following amounts:

start/finish:	+ 15.8 feet
1 mile:	+ 13.4 feet
2 mile:	+ 11.0 feet
3 mile:	+ 8.6 feet
5 mile:	+ 3.7 feet
10 mile:	- 8.3 feet

All of these marks have subsequently been relocated by the above amounts: the masking tape removed from the initial marks and the correct locations painted on the pavement.

COURSE ACCURACY

The three calibrated bicycle measurements for the 13 mile 192.5 yard Coronado Half Marathon course differed by a total of 12 yards. Since the average of these measurements was used to locate the start/finish line, this infers that the measurement accuracy for the Coronado Half Marathon is ±6 yards.

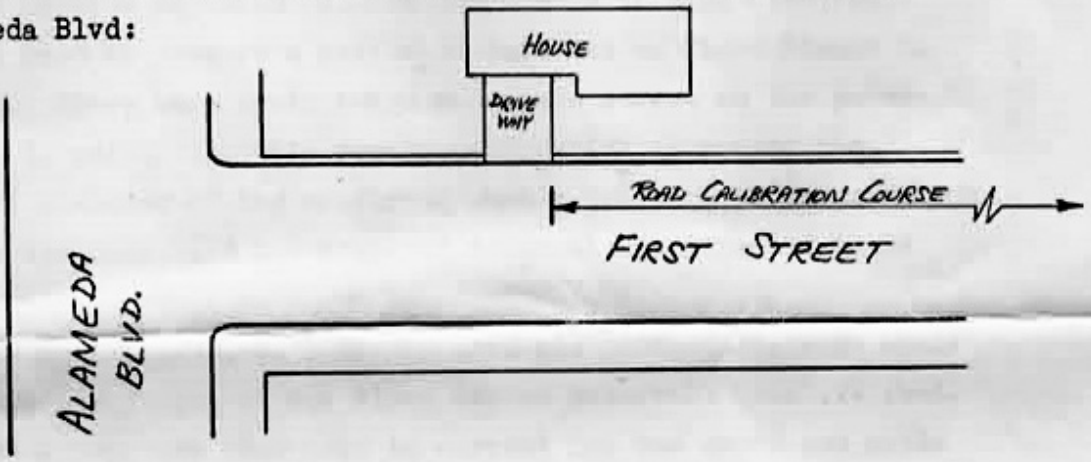
As in any street race, runners may chose to run on a route that is not exactly the same as the measured route. A fair measure of the amount of variance in the possible running routes is obtained by subtracting the distance measured between points A and B (measured on the right side of the street one way, and on the right side of street the other way). The average difference between these measurements is about 50 yards. Since the distance between points A and B represent about half of the running distance, this infers that the amount of variance in selecting running routes on the Coronado Half Marathon is about ±100 yards.

It is therefore safe to assume that the various runners that participate in the Coronado Half Marathon on July 4, 1974, will travel a distance of 13 miles 192.5 yards ± 106 yards. This is comfortably within the 170 yard tolerance allowed by the AAU Standards Committee for certification of a 13.11 mile road race course.

A Calibration Course in Coronado

LOCATION

A half-mile (2640 feet) road calibration course, accurate to ±.06 foot surface distance, has been measured and marked on the North side of First Street in the city of Coronado, California. The marks for this course are located about ten feet away from the curb so that parked cars will not interfere with calibrations. The West end of the course is approximately 150 feet east of Alameda Blvd:



The East end of the course is directly opposite the large brown doors of the electric plant between Orange and D Avenue: